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**DEVICE FOR CONTINUOUSLY CONTROLLING**

**CONDIMENTS GRINDING IN A MILL**

The present invention relates to a continuous-adjustment device for the grinding of condiments such as salt, pepper or any other spice in a mill.

This type of device is already known in the prior art, where the grinding action is adjusted by modifying the position of part of the grinding mechanism of the condiment mill, allowing step changes in the degree of fineness of the grinding.

In this type of prior-art device, when adjusting the grinding action, the operator is in contact with the condiment. This means that there is a risk of the product becoming contaminated.

In addition, it is not possible with this type of device to adapt the adjustment to electric condiment mills, since it has to be positioned where the condiments come out.

It should also be emphasized that the grinding adjustment device is dependent on the body of the condiment mill. This means that if the adjustment device deteriorates, the whole mill has to be changed.

It is an object of the invention to solve these various drawbacks by providing an adjustment device for the grinding of a condiment in the mill that offers continuous adjustment of the grinding, avoids contact between the user and the product to be ground, and enables the fineness of the grinding to be adjusted.

To this end, the subject of the present invention is a device for adjusting the grinding of a condiment in a mill in which the drive element comprises a thimble, a thimble support, a wheel and a fixing annulus for fixing to the mill, the device being characterized in

that the rotational movement of an adjustment ring fitted with an adjustment stop independent of said device results in a translational movement of said thimble support.

- 5 A clearer understanding of the invention will be gained from the description given below with reference to the attached drawing in which the figure shows an exploded view of the grinding adjustment device before it is fitted on to the drive pin of the condiment mill.
- 10 The device 1 according to the invention consists of an adjustment ring 3 having an adjustment stop 5, a thimble 6, a thimble support 4, an attachment ring 11, and, surrounded by a wheel 9, a drive pin 7.

15 The top part of the device 1 according to the invention consists of an adjustment ring 3 which is operated by turning it. The top of this adjustment ring 3 is provided with an adjustment stop 5 with an indexing bar 12.

20 This indexing bar 12 can be used to set the grinding to certain well-defined sizes. However, the grinder can also be adjusted sensitively, that is all the way around the adjustment ring and not only in the notches provided for this purpose.

The bottom of the adjustment ring 3 has fixing clips 13 for attaching the adjustment ring 3 to the attachment 25 ring 11. These clips 13 will preferably be in the form of plastic teeth.

On the inside of the adjustment ring 3 is a screw thread 14 by which it is fixed to the thimble support 4.

30 The bar 12 of the adjustment stop 5 indexes the adjustment ring 3 with respect to the thimble support 4, thus enabling the degree of fineness of the grind to be adjusted.

The thimble 6 is fixed to the thimble support 4, defining specific relative positions in rotation.

The thimble support 4 is provided with a reinforcement 15 which makes contact with the adjustment stop 5 of 5 the adjustment ring 3 at the forward and reverse limits. It is level with the notches 16 which take the indexing bar 12 on the outer top face of the thimble support 4.

The thimble support 4 also possesses five notches 16 10 designed to take the indexing bar 12. It therefore offers five indexed positions, but the intermediate positions are still possible, so there is a great variety of size of grind.

On the outside of the thimble support 4 is a screw 15 thread 17 allowing it to be engaged with the adjustment ring 3. This screw thread 17 is interrupted at regular intervals so that there is no obstruction to the mechanism 1 according to the invention if some of the condiment gets into it.

20 On the underside of the thimble support 4 are screw columns 18, enabling the thimble 6 to be held non-rotatably in the attachment ring 11, creating a sliding connection.

This annulus 2 has a purely decorative function. It may 25 be ornamented in various ways.

The attachment ring 11 that fits underneath the thimble support 4 is provided with two housings 19 to take the fixing columns 20 of the thimble support 4. These housings 19 also prevent the thimble support 4 from 30 rotating. The inside top part of the attachment ring 11 is provided with a protective collar 21 to stop condiment being thrown into the mechanism.

The drive pin 7 of the condiment mill, the top end of which has holding springs 8 and a wheel 9, is then placed in the assembly formed by the attachment ring 11, the thimble 6, the thimble support 4 and the 5 adjustment ring 3. The wheel 9 is thus clamped in the thimble support 4 and the thimble 6. The spring 8 can be replaced by a plastic distance piece for "salt" movements to avoid any risk of corrosion.

10 The drive pin 7 has knurling 22 to enable it to be held in the assembly ring 23.

The assembly ring 23 sits underneath the attachment ring 11. It is force-fitted onto the drive pin 7 where it grips the knurling 22.

The reservoir 24 is mounted on the attachment ring 11.

15 The adjustment ring 3 screws onto the thimble support 4. In a fixing movement, its spring clips snap onto the attachment ring 11.

The thimble 6 thus fits between the adjustment ring 3 and the thimble support 4.

20 Turning the adjustment ring 3 therefore results in a vertical movement of the thimble support 4.

This movement will be limited both by the stop 5 and by the reinforcement 15. It may have a maximum amplitude of 3 mm, thus varying the fineness of the grind.

25 By contrast, the vertical position of the wheel 9 is fixed. The wheel 9 is held in the vertical direction by the thrust stop which has circlips underneath it. The thrust stop may be fixed either to the fixing annulus or directly to the body of the condiment mill (which is 30 not shown).

Since the thimble support 4 cannot turn, it cannot be pulled round by the rotary movement of the wheel 9. This ensures that the adjustment setting is not accidentally altered.

- 5 The mill adjustment device according to the invention modifies the position between the wheel and the thimble by moving the thimble, not by moving the wheel as is the usual practice.

This adjustment device offers continuous grinding. What 10 is more, it is independent of the operation of the rest of the mill and is therefore readily adaptable to different types of mills, whether manual or electric, by means of an adapter.

The adjustment ring can be decorated to suit different 15 models of condiment mills, which may be made of wood or stainless steel, for example.

In addition, this type of grinding adjustment device can be adapted both to pepper mills and to instruments of different kinds, owing to its geometry and compact 20 design.

Moreover, the adjustment system according to the invention reduces manufacturing costs because it consists of few parts.

Although the invention has been described with 25 particular embodiments, it encompasses all technical equivalents of the means described.